

WE SIMPLY SOUND BETTER

**Reference 7270
series II**

**Seven Channel Amplifier
OWNER'S MANUAL**

B & K Components Ltd.

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Accessories included: Manual and Power cord

SAFETY PRECAUTIONS



PLEASE READ BEFORE INSTALLING

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

*The lightning flash with an arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated “**dangerous voltage**” within the product’s enclosure that may be of a sufficient magnitude to constitute a risk of electric shock to you.*

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the unit.

- Observance of polarity is essential. Double-check connections before turning the amplifier on. The amplifier can be damaged if the unit is connected when its polarities are incorrect.
- Damage can occur to your speakers if the power rating* of each individual driver is exceeded by the amplifier. Make sure that all the drivers in your speaker system are capable of handling not only the continuous power being delivered by the amplifier, but the energy that is likely to be generated during strong and dynamic passages.
- Turn the amplifier ‘off’ before plugging in or unplugging the input and speaker cables!!!
- The Reference 7270 series II is equipped with raised feet so that continuous ventilation can be maintained. They also help to keep acoustic feedback into the amplifier at a minimum. Additionally they provide a measure of protection against scratching any surface the unit might be resting on. **Do not alter or remove them.**
- Do not stack anything on top of the amplifier (preamplifier, processor, source, etc.).
- Leave at least 2-3 inches clearance from the top of the amplifier to the next shelf, component, etc., to insure proper ventilation.

* If you are at all unsure of what the speaker ‘ratings’ are, contact your dealer.

THE REFERENCE 7270 SERIES II PURPOSE AND FUNCTION

The Reference 7270 series II is a high current, seven channel power amplifier. It is designed to be used in all types of audio or audio/video systems.

DESIGN AND CONSTRUCTION

The Reference 7270 series II utilizes high quality electronic circuitry to achieve an environment wherein a detailed, transparent, and highly musical sound can be realized. The high quality parts complement includes; state-of-the-art solid state devices, 1% metal film resistors, computer grade electrolytic power supply capacitors, and a high capacity toroidal transformer.

The Reference 7270 series II operates with a class A predriver and AB high current MOSFET power output stages. It is capable of reproducing the most demanding audio signals at its rated power levels.

FEATURES

THX Ultra Certified - The unit has passed a rigorous series of Lucasfilm THX quality and performance tests and it is guaranteed that this amplifier will give superb performance for years to come.

Toroidal Transformer - Efficient, high current, shielded transformer that supplies the amplifier with a clean and constant supply of power, even during highly demanding source material passages.

Discrete Circuitry - Dynamically provides a full, accurate, and three dimensional reproduction of source material.

Class A Predriver - Improves low level detail and clarity for smoother, more musical sound.

AB MOSFET Output Stage - Provides efficient and linear power delivery, as well as protection from thermal overload.

Gold Plated Connectors - Improved connections for better sound quality and minimized signal loss and degradation.

1% Metal Film Resistors - Higher quality resistors for lower noise, better sound, and a greater degree of repeatability.

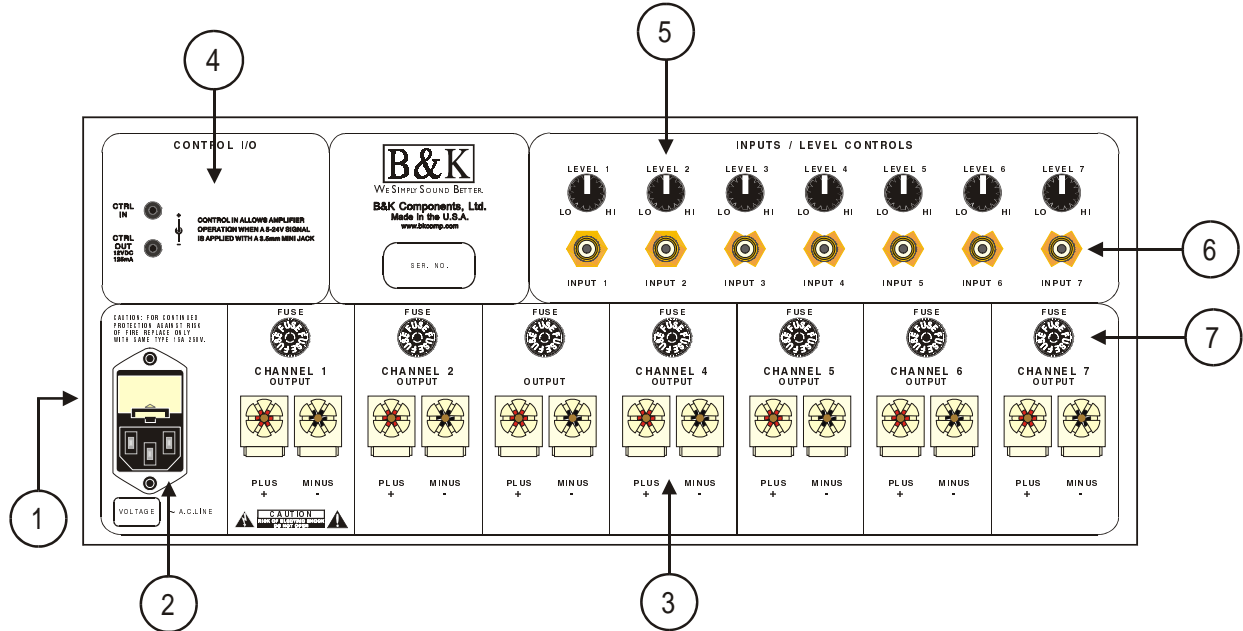
High Current - Ability to cleanly, accurately, and reliably reproduce demanding recordings or source materials into low impedance drivers and speaker systems.

Computer Grade Capacitors - Large capacity computer grade electrolytic capacitors for extended low frequency control, increased power supply, and improved dynamics.

Fused Outputs - Provides limited protection from accidental shorting of amplifier outputs.

Heavy Duty Gold Binding Posts - Improved current carrying capacity and sound quality

Rear Panel View



1. AC fuse holder
2. AC Input receptacle
3. Speaker outputs
4. Amplifier control muting input/output
5. Level controls
6. Inputs
7. Speaker fuses

REAR PANEL DESCRIPTION

- 1. AC fuse holder** - Holds the AC Line fuse. This fuse is a 15 Amp / 250 Volt Slow Blow fuse. Replace only with the same type and value fuse.
- 2. AC Input receptacle** - For attaching the supplied AC power cord to the amplifier.
- 3. Speaker outputs** - For connecting the speakers to the amplifier. Explained further on page 6.
- 4. Amplifier control muting input/output** - To provide remote switching of the mute on/off feature of the amplifier. Explained further on pages (8 - 9).
- 5. Level controls** - For adjusting the input level of each channel into the amplifier. There are seven level controls on the back of the amplifier. One level control for each channel.
- 6. Inputs** - For connecting signal patch cables (interconnects) from the preamplifier to the amplifier to pass a signal. Pages (5 - 6).
- 7. Speaker Fuses** - Protection against amplifier damage in the case of shorted speaker wires. Replace fuse with the same value 6 AMP T-Lag only! **VERY IMPORTANT!**

LEVEL CONTROLS



THX certified units are denoted by the THX Ultra logo on the faceplate of the unit. For use in THX reference theater system, the level controls must be set to the full clockwise position (highest possible level).

Generally in a home theater application, the level controls on the rear will not be used. All of the levels will be matched through the surround processor. In a system that uses the Reference 7270 series II for other applications, adjustment of level controls may be needed. Start with the level controls turned all the way up (fully clockwise), then adjust the level according to your system requirements to match each speaker as to produce the same sound pressure level with the same reference input.

When using a combination of different speakers that may have different speaker ratings and efficiencies, the level controls may be used to match the output level of the speakers in the system. Example: Using a speaker with an efficiency of 93 dB @ 1w/1m and a speaker with an efficiency of 97 dB @ 1w/1m together. A 97dB speaker may sound louder than a 93 dB speaker at a given volume level. The level control for a 93 dB speaker would be set at a relative level that is higher than a 97 dB speaker to match their audio volume levels. Turning the level control knob clockwise will increase the relative output volume of the speaker. Turning the level control knob counter clockwise will decrease the relative output volume of the speaker.

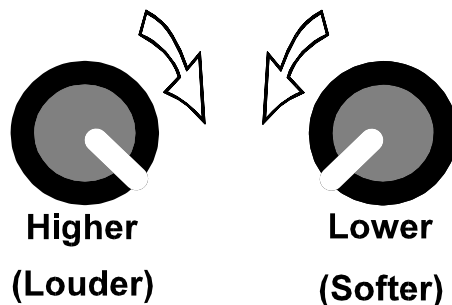
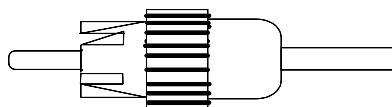


Figure B

INPUTS

RCA type connectors accept line inputs from the preamplifier's output connectors. There are seven input connectors, one for each channel, that may be used to connect the amplifier to the preamplifier.



RCA cable connector

Here is a typical preamplifier to amplifier setup:

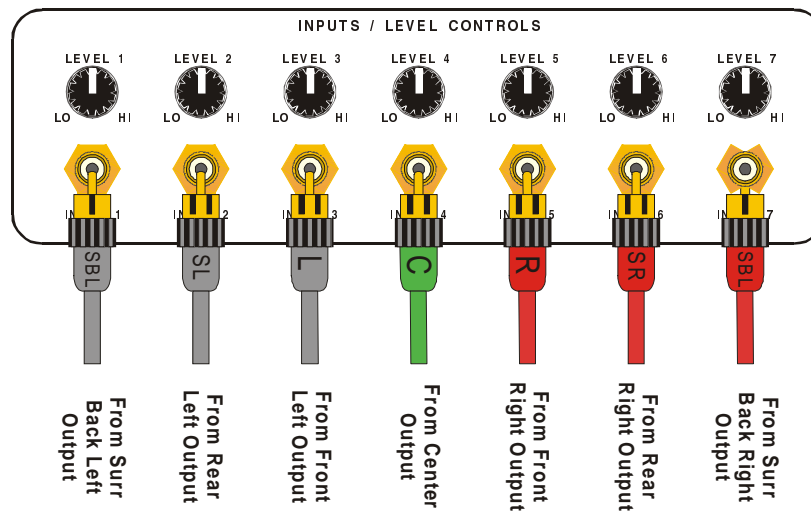
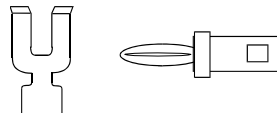


Figure C

OUTPUTS

Five way binding posts are provided. There is one pair provided for each channel. They are designed to accept a banana-type plug, spade-lug connector (shown below), terminal posts, and bare wire, and they are color coded for easy identification. The positive (+) post should always be connected to the speakers (+) jack. The negative (-) post should always be connected to the speakers (-) jack.



Spade connector Banana jack

Here is a typical amplifier output setup:

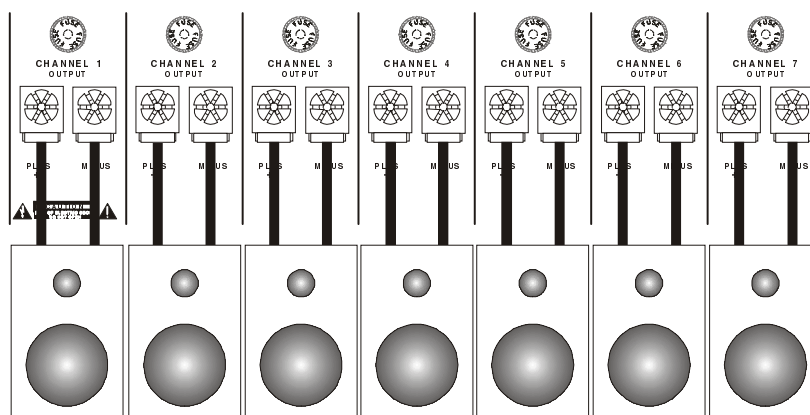


Figure D

SYSTEM INSTALLATION

There will most likely be a number of cables involved in the installation of your home entertainment system. Preplanning is essential in order to maximize system efficiency. We recommend the following as a means of helping you reach that goal:

- Make a diagram of your proposed system by laying out the relative location of each component in the system. Then lay out the proposed cable runs between them. Number each cable and record its length on the diagram for future reference.
- Cable runs are critical in that they must be kept away from sources of power radiation (amplifiers, power cords, heaters, appliances, etc). For safety reasons, they should also be kept out of traffic areas.
- The process of optimizing the system will include the type of cable, the length of the run, and the obstructions it must deal with along its run. Your dealer can advise you on the products available and their relative merits. If building custom length audio cables is not your strength, your dealer should be able to help you with that as well.
- When possible, use a separate AC power line for the amplifier, one that is not shared by any other household component. **THIS IS VERY IMPORTANT!!!**

Tip: Take a piece of string (longer than the longest cable run) and mark it at each foot of length. Then do a mock cable run using the string, dressing it neatly along the way. Count the divisions to the next full foot, and add one foot to allow for some movement of the components. This will provide you with the ideal cable length.

MAKING THE CONNECTION

- Before doing anything, insure that the power switch on the amplifier's front panel is in the 'off' position.
- Again, it is recommended that you locate a separate AC power outlet for the amplifier, one that is **not** shared by any other audio component in the system or any other household component. This will eliminate the possibility of the amplifier 'modulating' the power being supplied to the component and compromising the signal originating from that component.
- Locate the AC power cord provided with the amplifier and plug it into the power input receptacle in the rear panel. **Do not connect it to the AC power source yet!**
- Connect the audio cables from your preamplifier's output to the corresponding input connector on the amplifier.
- Connect the wires from your speakers to the appropriate outputs on the amplifier. It is absolutely essential that you observe correct polarity in all of these connections.

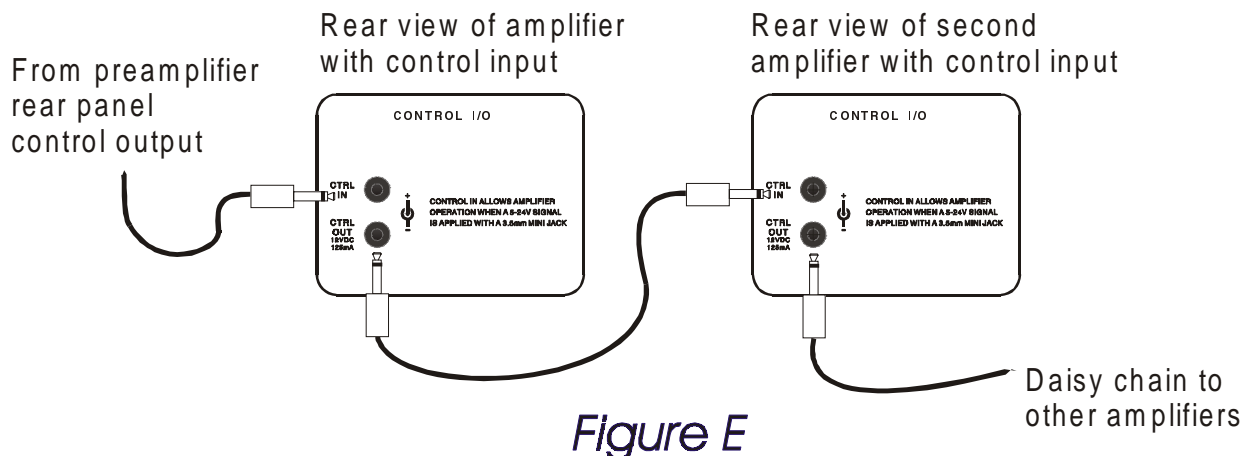
Example: If you connect your left front output of your preamplifier to channel 4 input on the amplifier, remember to connect your left front speaker wires to channel 4's outputs. Always observe polarity when connecting speakers, connect amplifiers (+) to the speakers (+) and amplifiers (-) to speakers (-).

- Double check all connections.
- Connect a playback unit (CD, DVD, VLD, Tuner, etc.) to the preamplifier. Turn on the preamplifier, turn the volume on the preamplifier to a minimum level, then turn on the amplifier (in that order). Set the source on the preamplifier to the playback unit you've just connected. Turn the volume up slowly and listen for music from all channels. If this is not the case, and you don't hear any sound, double check your installation.
- Should you encounter any problems that cannot be traced to the source or the material being played, consult the "TROUBLESHOOTING" section on page 10.

*Note: When turning equipment 'off', the amplifier should always be turned off **first**, then the preamplifier. When turning equipment 'on', the preamplifier should always be turned on **first**, then the amplifier. **Before turning anything on, insure the preamplifier is at a low volume level.***

CONTROL MUTING

A control is used to “trigger” various outboard amplifiers, projectors, or other accessories by sending a specified voltage when a certain mode or source is selected from the source of the control voltage “trigger”. A control system is provided on each Reference 7270 series II amplifier to allow remote switching of the mute on/off feature. A preamplifier’s control output, such as what is provided with B&K series preamplifiers, can be utilized to provide a control signal to the Reference 7270 series II. If more than one amplifier is being controlled, the control signal can be extended to include each successive unit by simply running a 1/8" MINI - JACK cable from the CTRL OUT connector of the first amplifier to the CTRL IN connector of the next unit (commonly referred to as ‘daisy chaining’). An example of how to connect two amplifiers is illustrated in Figure E below.



If a source other than a B&K series preamplifier is used to control one or multiple amplifiers, only the control output voltage from the source is critical. It must be within the range, as indicated on the rear panel, of 5-24 volts AC or DC. The amplifier will provide each successive amplifier with a control voltage of 12 volts DC for reliable operation. The amplifiers control output may be used as a source of 12 VDC @ 125 mA for other user applications as well.

DO NOT POWER MOTORS WITH THIS CIRCUIT!!!

If the control function is desired, each unit in the system must remain connected at all times and the control must be enabled. To enable the control function, the CTRL IN jack must have a 3.5mm mini jack plugged into it for each controllable amplifier in the system.

** Note: The control voltage is for muting control only. Each amplifier must be connected to its own source of AC power in order for it to operate.*

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
No sound (‘on’ LED not illuminated)	<ol style="list-style-type: none"> 1. Power cord not plugged in 2. Power off at AC source 3. AC power inlet fuse blown or faulty 4. Control Input not activated. 	<ol style="list-style-type: none"> 1. Reconnect power cord 2. Check AC switch or fuse 3. Check for shorts or overloading 4. Supply Control IN with a 5-24 Volt supply. (Page 5)
No sound on some or all selected channels (‘on’ LED illuminated)	<ol style="list-style-type: none"> 1. Speaker leads loose or faulty. 2. Line stage to amp cables loose or faulty. 3. Source to line stage cables loose or faulty. 4. Line stage or source not correctly selected. 5. Speaker fuse blown 6. Level controls adjusted improperly 	<ol style="list-style-type: none"> 1. Tighten, repair or replace cable 2. Tighten, repair or replace cable 3. Tighten, repair or replace cable 4. Check all switch settings 5. Check all speaker fuses 6. Re-adjust level controls
Sound lacks direction, bass weak	<ol style="list-style-type: none"> 1. Speakers connected out of phase 	<ol style="list-style-type: none"> 1. Check connections making sure that cables are connected (+) to (+) and (-) to (-)
Loud hum or buzz on one or more channels	<ol style="list-style-type: none"> 1. Poor ground connection in inter-connect cables. 	<ol style="list-style-type: none"> 1. Check all connectors and repair as necessary.
Channel sounds distorted and low in output	<ol style="list-style-type: none"> 1. Blown rail fuse 	<ol style="list-style-type: none"> 1. Replace blown rail fuse inside amplifier

**** Note:** If the unit continues to blow power inlet fuses, **DO NOT USE A HEAVIER FUSE!!**, have it serviced.

CARE AND CLEANING

Under normal use, the amplifier will not require any special care. Over time you may wish to clean the exterior of the unit by wiping it with a damp cloth to remove any dirt or dust that accumulates on it. Unplug the amplifier and be sure that it has completely powered down before you apply any damp cloth. Do not let any liquid enter the amplifier through the vents in the top cover. **REMEMBER, LIQUIDS CONDUCT ELECTRICITY!!!** You may clean the connectors on the back panel with isopropyl alcohol annually.

REFERENCE 7270 SERIES II SPECIFICATIONS

Power rating: 8 ohms 4 ohms	200 watts @ 1 kHz 375 watts @ 1 kHz
Frequency response	5 Hz - 45 kHz
Input sensitivity	1.4 Volts
THD (S+N)	0.09 % @ 1 kHz
Input impedance	33.2 k ohms
Damping factor	450
Current (peak to peak)	75 Amps
Slew rate	14 V / μ sec
Dynamic headroom	1.2 dB
S/N (A-weighted)	95 dB
Voltage gain	28
Line voltage	120/220/240 VAC switchable
Dimensions (O.A.)	17"(w) X 19.25"(d) X 7.25"(h)
Weight	78 lbs. max.
Power consumption	1830 watts max 17.5 Amps max current draw 130 watts @ no input
Replacement fuses	Line - 15 Amp/250 Volt Slow Blow Rails - 6 Amp/250 Volt T-Lag Speaker - 6 Amp/250 Volt T-Lag In-rush - 2 Amp/250 Volt Slow Blow Control - 0.5 Amp/250 Volt Fast Blow

LIMITED WARRANTY

B&K Components Ltd., referred to herein as B&K, warrants your B&K equipment against all defects in material and workmanship for a period of five years from the date of purchase. This warranty applies only to the original purchaser and only to equipment in normal residential use and service. Defective equipment must be returned to B&K, prepaid, accompanied by sufficient payment to cover the cost of return shipping and handling, and will be repaired or replaced at the discretion of B&K whose decision as to the method of reparation will be final.

This warranty shall not apply to any equipment which is found to have been improperly installed, incorrectly fused, misused, abused, or subjected to harmful elements, used in any way not in accordance with instructions supplied with the unit, or to have been modified, repaired or altered in any way without the expressed, written consent of B&K. This warranty does not apply to the cabinet, the remote controller, or appearance items such as the faceplate, control buttons, or display lenses, nor does it cover any expenses incurred in shipping the unit to and from the manufacturer's service depot.

No warranty, implied or otherwise created by State law shall extend beyond the terms of this warranty and B&K shall not be liable for any incidental or consequential damage arising out of a defect in material or workmanship of the unit during the terms of this warranty or thereafter. Some States do not allow the exclusion or limitation of incidental or consequential damages and the foregoing exclusions may not apply to you.

This warranty gives you specific legal rights. You may also have other rights which vary from State to State.

No agent, representative, dealer or employee of B&K has the authority to increase or alter the obligations or terms of this warranty.

B&K Components Ltd.

RETURNING EQUIPMENT

No equipment may be returned to B&K Components Ltd. Without a RETURN AUTHORIZATION. Should you find it necessary to return equipment to B&K, for any reason, a RETURN AUTHORIZATION (RA) number must be issued by B&K in respect of the equipment being returned. You may request an RA number by calling B&K at the numbers below. We ask that you provide the following information at that time.

1. Your name, address, and phone number.
2. The model and serial number of the equipment being returned.
3. A description of the problem being experienced.

Your call will be referred to a Technical Service Representative who will work with you to resolve the problem. If it is determined that the unit must be returned for repair, an RA number will be issued.

**B&K Components Ltd. 2100 Old Union Road, Buffalo New York 14227
1-800-543-5252 or 1-716-656-0023**

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LIST YOUR UNIT INFORMATION HERE

MODEL # *Reference 7270*

SERIAL # _____

DEALER NAME _____

DEALER PHONE # _____

SALES PERSON _____

DATE PURCHASED _____